

# PATENT COOPERATION TREATY

From the  
INTERNATIONAL SEARCHING AUTHORITY

To:

see form PCT/ISA/220

# PCT

## WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing  
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference  
see form PCT/ISA/220

**FOR FURTHER ACTION**  
See paragraph 2 below

International application No.  
PCT/JP2005/008661

International filing date (day/month/year)  
02.05.2005

Priority date (day/month/year)  
13.05.2004

International Patent Classification (IPC) or both national classification and IPC  
H01M8/02, H01M8/04, H01M8/06, H01M8/10

Applicant  
YAMAHA HATSUDOKI KABUSHIKI KAISHA

### 1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☒ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

### 2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

### 3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:



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WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

**10/562772**  
International application No.  
PCT/JP2005/008661

**IAP20 Rec'd PCT/PTO 29 DEC 2005**

**Box No. I Basis of the opinion**

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
  - ☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
  - a. type of material:
    - ☐ a sequence listing
    - ☐ table(s) related to the sequence listing
  - b. format of material:
    - ☐ in written format
    - ☐ in computer readable form
  - c. time of filing/furnishing:
    - ☐ contained in the international application as filed.
    - ☐ filed together with the international application in computer readable form.
    - ☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.  
PCT/JP2005/008661

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**Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

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1. Statement

Novelty (N)	Yes: Claims	1-10
	No: Claims	
Inventive step (IS)	Yes: Claims	1-10
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-10
	No: Claims	

2. Citations and explanations

**see separate sheet**

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**Box No. VI Certain documents cited**

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1. Certain published documents (Rules 43*bis*.1 and 70.10)

and /or

2. Non-written disclosures (Rules 43*bis*.1 and 70.9)

**see form 210**

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING  
AUTHORITY (SEPARATE SHEET)**

International application No.

PCT/JP2005/008661

**Re Item V**

**Reasoned statement with regard to novelty, inventive step or industrial applicability;  
citations and explanations supporting such statement**

**1. Documents**

- D1: US 2003/008186 A1 (DICKMAN ANTHONY J ET AL) 9 January 2003 (2003-01-09)
- D2: US-A-5 780 179 (OKAMOTO ET AL) 14 July 1998 (1998-07-14)
- D4: US 2003/118881 A1 (WALSH MICHAEL M ET AL) 26 June 2003 (2003-06-26)
- D5: PATENT ABSTRACTS OF JAPAN vol. 2002, no. 08, 5 August 2002 (2002-08-05) & JP  
2002 124290 A (NISSAN MOTOR CO LTD), 26 April 2002 (2002-04-26)

**2. Novelty**

The subject-matter of claims 1-10 is considered to be novel, Article 33 (1) and (2) PCT.  
None of the available prior art documents discloses a fuel cell system comprising a water tank having an inlet port arranged to introduce moisture-containing exhaust gas and a partition member at a position lower than the inlet port and arranged to partition an interior of the water tank into an upper and a lower space.

Nor is a water tank disclosed in which the intake pipe is of trumpet like shape.

Both variations solve the problem of avoiding that water is blown out by the incoming exhaust gas flow.

**3. Inventive Step**

The subject-matter of claims 1-10 is considered to be based on an inventive step, Article 33 (3) PCT.

3.1 The problem underlying the present application is considered to enhance the water collection which is extracted from the exhaust gas of fuel cell which is mounted on a moving vehicle.

3.2 This problem is known in the prior art but solved in a different way.

3.3 None of the available prior art discloses or suggests to install either a partition member in the water tank or to provide an inlet having a trumpet shape.

The first option solves the problem by avoiding the water from being spilled or blown out by providing a partition member.

The second option used the wider diameter at the end of the inlet to reduce the velocity of the incoming exhaust gas.

The transportation apparatus including such a fuel cell comprising such a water tank is also considered to be inventive.

#### **4. Industrial Applicability**

The subject-matter of claim 1-10 is industrially applicable in the field of water storing for fuel cells.

#### **Re Item VI**

##### **Certain documents cited**

##### **Certain published documents**

Application No Patent No	Publication date (day/month/year)	Filing date (day/month/year)	Priority date (valid claim) (day/month/year)
US-B1-6 740 432	25.05.2004	13.06.2000	22.06.1999